

What is claimed is:

1 1. A method of establishing a call in a wireless network, comprising:
2 sending a request for a packet-switched call over the wireless network;

3 and

4 communicating control signaling in a traffic channel of the wireless
5 network to establish the packet-switched call.

1 2. The method of claim 1, wherein sending the request comprises sending the
2 request in a random access channel.

1 3. The method of claim 2, wherein sending the request comprises sending a
2 predefined code in a random access channel of an Enhanced General Packet Radio
3 Services system.

1 4. The method of claim 3, wherein sending the code comprises sending the
2 code in a channel selected from the group consisting of a RACH, PRACH, and
3 CPRACH.

1 5. The method of claim 1, further comprising retrieving a pre-assigned code
2 to send in the request.

1 6. The method of claim 5, wherein retrieving the pre-assigned code
2 comprises retrieving a random access channel mobile station code.

1 7. The method of claim 1, wherein communicating the control signaling
2 comprises communicating the control signaling in a packet data traffic channel.

1 8. The method of claim 7, wherein communicating the control signaling
2 comprises communicating the control signaling in PDTCH bursts of an Enhanced
3 General Packet Radio Services system.

1 9. The method of claim 7, wherein communicating the control signaling
2 comprises communicating the control signaling in a packet data traffic channel mapped to
3 a dedicated physical channel.

1 10. The method of claim 9, further comprising communicating bearer traffic
2 in another traffic channel mapped to the dedicated physical channel.

1 11. The method of claim 10, wherein communicating the control signaling
2 comprises communicating the control signaling in a PDTCH, and wherein
3 communicating the bearer traffic comprises communicating the bearer traffic in a TCH,
4 the PDTCH and TCH defined according to an Enhanced General Packet Radio Services
5 protocol.

1 12. The method of claim 1, wherein communicating the control signaling
2 comprises communicating Session Initiation Protocol messages.

1 13. The method of claim 12, wherein communicating the control signaling
2 comprises communicating a Session Initiation Protocol Invite request.

1 14. The method of claim 1, further comprising sending a release message to
2 terminate the packet-switched call in a traffic channel.

1 15. The method of claim 14, wherein sending the release message comprises
2 sending a Session Initiation Protocol Bye message.

1 16. The method of claim 1, further comprising sending quality-of-service
2 related messages in a traffic channel.

1 17. The method of claim 16, wherein sending the quality-of-service related
2 messages comprises sending Resource Reservation Protocol messages.

1 18. The method of claim 1, wherein communicating the control signaling
2 comprises communicating the control signaling in PDTCH bursts, the method further
3 comprising communicating bearer traffic in TCH bursts.

1 19. The method of claim 1, wherein communicating the control signaling
2 comprises communicating the control signaling in PDTCH bursts, the method further
3 comprising communicating bearer traffic in PDTCH bursts.

1 20. An article comprising one or more storage media containing instructions
2 that when executed cause a controller to:

3 send control signaling to request a channel for a packet-switched call over
4 a wireless network; and
5 add a predetermined code into the control signaling to identify the call as a
6 packet-switched call.

1 21. The article of claim 20, wherein the instructions when executed cause the
2 controller to send the control signaling selected from the group consisting of RACH,
3 PRACH, and CPRACH.

1 22. The article of claim 20, wherein the instructions when executed cause the
2 controller to further communicate packet-switched call control signaling in traffic
3 channels of the wireless network.

1 23. The article of claim 20, wherein the instructions when executed cause the
2 controller to communicate Session Initiation Protocol messages in traffic channels of the
3 wireless network.

1 24. The article of claim 23, wherein the instructions when executed cause the
2 controller to communicate the Session Initiation Protocol messages in PDTCH bursts of a
3 General Packet Radio Services system.

1 25. The article of claim 23, wherein the instructions when executed cause the
2 controller to communicate a Session Initiation Protocol Invite message.

1 26. The article of claim 25, wherein the instructions when executed cause the
2 controller to receive response messages to the Invite message.

1 27. The article of claim 23, wherein the instructions when executed cause the
2 controller to communicate a Session Initiation Protocol Bye message to release a call.

1 28. The article of claim 23, wherein the instructions when executed cause the
2 controller to communicate messages to provide a supplementary service.

1 29. A mobile station for use in a wireless communications system having base
2 stations, comprising:

3 a storage element storing a predetermined code associated with packet-
4 switched calls; and
5 a controller to send control signaling to one of the base stations over a
6 wireless link to set up a packet-based call,
7 the control signaling containing the predetermined code.

1 30. The mobile station of claim 29, wherein the control signaling comprises a
2 random access channel.

1 31. The mobile station of claim 30, wherein the random access channel
2 comprises a packet random access channel.

1 32. The mobile station of claim 31, wherein the packet random access channel
2 comprises a COMPACT packet random access channel.

1 33. A radio network control system, comprising:
2 an interface to a wireless link capable of communicating with a mobile
3 station; and
4 a controller adapted to receive a request to set up a packet-switched call
5 over the wireless link,
6 the controller further adapted to assign a logical channel combination in
7 response to the request.

1 34. The radio network control system of claim 33, wherein the logical channel
2 combination comprises TCH + FACCH + SACCH + PDTCH + PACCH + PTCCH.

1 35. The radio network control system of claim 34, wherein the controller is
2 adapted to communicate Session Initiation Protocol messages are in PDTCH bursts.

1 36. The radio network control system of claim 34, wherein the controller is
2 adapted to communicate a success indication of a packet-switched call session in a
3 PACCH burst.

1 37. The radio network control system of claim 34, wherein the controller is
2 adapted to communicate radio resource management signaling in a PACCH burst to
3 indicate a state of the packet-switched call.

1 38. A data signal embodied in a carrier wave and containing instructions that
2 when executed cause a system in a wireless network to:
3 receive control signaling to set up a packet-switched call over the wireless
4 network, the control signaling carried in a first traffic channel; and
5 establish the packet-switched call over the wireless network.

1 39. The data signal of claim 38, wherein the instructions when executed cause
2 the system to further communicate bearer data in a second traffic channel.

1 40. The data signal of claim 39, wherein the control signaling is carried in a
2 PDTCH and the bearer data is carried in a TCH.

1 41. The data signal of claim 38, wherein the instructions when executed cause
2 the system to further communicate bearer data in the first traffic channel.

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